




UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,508	09/16/2003	Toru Takayama	12732-166001	1342
26171	7590	12/02/2005	EXAMINER	
FISH & RICHARDSON P.C. P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			LE, THAO X	
			ART UNIT	PAPER NUMBER
			2814	

DATE MAILED: 12/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/662,508	Applicant(s) TAKAYAMA ET AL. 	
	Examiner Thao X. Le	Art Unit 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 12-15 and 17-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 12-15 and 17-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 0916 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/27/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 27 October 2005 has been entered.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double

patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-6, 12-15 and 17-28 provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-22 of copending Application No. Application No. 10/662357 in view of US PUB 2004/0187917 to Pichler.

This is a provisional obviousness-type double patenting rejection.

In claims 1-22, Yamazaki (6589) claims a light emitting apparatus comprising a TFT electrically connects to the first electrode, a luminescent layer formed over the first electrode, a second electrode formed over the luminescent layer, an inorganic layer (silicon oxide, silicon nitride) formed over the second electrode, and a fluoroplastics formed over the inorganic layer.

But, Yamazaki (6589) does not disclose a fluoroplastics formed over a second electrode and an inorganic layer (silicon oxide, silicon nitride) formed over the fluoroplastics layer.

However, Pichler discloses a liquid crystal display in fig. 5 comprising a luminescent layer 501 [0070], [0071], and [0101] formed over the first electrode 508, a second electrode 502 formed over the luminescent layer 501, a fluoroplastics 512 [0108] formed over the second electrode 502, an inorganic

layer (silicon oxide, silicon nitride) [0108] formed on the fluoroplastics. At the time the invention was made; it would have been obvious to one of ordinary skill in the art to use the inorganic layer formed on the fluoroplastics teaching of Pichler with Yamazaki's device, because it would have protected against exposure to water or air as taught by Pichler [0108].

With respect to claims 23-28, it would have been obvious to one of ordinary skill in the art to use the teaching of Pichler and Yamazaki as claim for intended used, MPEP 2144.07.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by US Pub. 20040187917 to Pichler.

Regarding claim 1, Pichler discloses a light-emitting apparatus having a light-emitting device in fig. 5 comprising: a first electrode 508; a second electrode 502 [0098]; an electroluminescent film 501 [[0070], [0071] and [[0101] disposed between the first electrode 508 and the second electrode 502 over the first electrode 508; a film 512 containing fluoroplastics [0108] formed over the second electrode 502; and an inorganic

insulating film (silicon oxide, silicon nitride) [0108] formed on the film 512 containing fluoroplastics (multi-layer stack of organic materials with inorganic material).

Regarding claim 5, Pichler discloses the light emitting apparatus wherein the film containing fluoroplastics is one type of polymer selected from polytetrafluoroethylene [0108].

6. Claims 1 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by US Pub. 20030143319 (or US 6926572) to Park et al.

Regarding claim 1, Park discloses a light-emitting apparatus having a light-emitting device in fig. 3 comprising: a first electrode 102 [0035]; a second electrode 114 [0040] over the first electrode 102; an electroluminescent (EL) film 108 [0037] disposed between the first electrode 102 and the second electrode 114; a film 118 [0033] containing fluoroplastics [0056] formed over the second electrode 114; and an inorganic insulating film (silicon oxide, silicon nitride) [0043] formed on the film 118 containing fluoroplastics (multi-layer stack of organic insulating film is formed on and/or below the inorganic insulating film).

Regarding claim 5, Part discloses the light emitting apparatus wherein the film containing fluoroplastics is one type of polymer selected from polytetrafluoroethylene [0056].

7. Claims 1 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6872473 to Song et al.

Regarding claim 1, Song discloses a light-emitting apparatus having a light-emitting device in fig. 1 comprising: a first electrode (anode); a second electrode

Art Unit: 2814

(cathode) over the first electrode; an electroluminescent (EL) film disposed between the first electrode and the second electrode (organic EL layer 300 has EL layer formed between anode and cathode layers as described in col. 3 lines 33-39); a film 400 containing fluoroplastics, col. 3 lines 50-51, formed over the second electrode; and an inorganic insulating film 500, col. 4 line 25, formed over the film 400 containing fluoroplastics.

Regarding claim 5, Song discloses the light emitting apparatus wherein the film containing fluoroplastics is one type of polymer selected from polychlorotrifluoroethylene, col. 3 lines 50-55.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

Art Unit: 2814

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 2, 12, 24 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2003/0067266 to Kim et al. in view of US Pub. 6872473 to Song.

Regarding claims 2, Kim discloses a light emitting apparatus having a light emitting device in fig. 4 comprising: substrate 100 [0045], a TFT [0045] over the substrate 100, an insulating film 118 [0053] over the TFT, a first electrode 126 [0051] over the insulating film 118 and electrically connected to the TFT, fig. 4, a second electrode 130 [0047] over the first electrode 126, an electroluminescent film 128 [0047] disposed between the first electrode 126 and the second electrode 130, a organic or inorganic film 136 [0048] over the second electrode 130, and an inorganic (silica) insulating film 138 [0050] formed over the film 136.

But Kim does not disclose the light emitting apparatus wherein a film containing fluoroplastics

However, Song discloses a light emitting apparatus in fig. 1 comprising: a first electrode (anode); a second electrode (cathode) over the first electrode; an electroluminescent (EL) film disposed between the first electrode and the second electrode (organic EL layer 300 has EL layer formed between anode and cathode layers as described in col. 3 lines 33-39); a film 400 containing fluoroplastics, col. 3 lines 50-51, formed over the second electrode; and an inorganic insulating film 500, col. 4 line 25, formed over the film 400 containing fluoroplastics. At the time the invention was made; it would have been obvious to

one of ordinary skill in the art to use the inorganic film over the fluoroplastics teaching of Song to replace the film 136 in Kim's device, because it would have protected the device from degradation caused by an external factor such as oxygen or moisture as taught by Song, see abstract.

Regarding claims 12 and 30, Kim does not disclose the light emitting apparatus wherein the film containing fluoroplastics is one type of polymer selected from polychlorotrifluoroethylene, wherein the film containing fluoroplastics has irregularities.

However, Song discloses the light emitting apparatus wherein the film containing fluoroplastics is one type of polymer selected from polychlorotrifluoroethylene, col. 3 lines 50-55. At the time the invention was made; it would have been obvious to one of ordinary skill in the art to use the inorganic film over the fluoroplastics teaching of Song to replace the film 136 in Kim's device, because it would have protected the device from degradation caused by an external factor such as oxygen or moisture as taught by Song, see abstract.

With respect to 'irregularities', it would have been obvious that the junction of layers 400 and 500 of Song would comprise irregularities because of different materials interface.

Regarding claim 24, Kim discloses the light emitting apparatus is selected from the group consisting of digital camera, laptop computer, mobile computer, portable image reproducing device, goggle type display, video camera and cellular phone [0006].

Art Unit: 2814

11. Claims 3-4, 6, 13-15, 17-22, 25-28, 31-32, 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2003/0067266 to Kim et al. in view of US Pub. 6872473 to Song and US 664207 to Seo et al.

Regarding claims 3-4 and 17-18, Kim discloses a light-emitting apparatus in fig. 4, having a light-emitting device comprising: a substrate 100, a TFT over the substrate 100, an insulating film 118 over the TFT; a first electrode 126 over the insulating film 118 and electrically connected to the TFT, fig. 4, a second electrode 130 over the first electrode 126, an electroluminescent film 128 disposed between the first electrode 126 and the second electrode 130, a organic or inorganic film 136 formed over the second electrode 130, and an inorganic insulating 138 formed over the film 136, wherein the inter insulating 118 comprises a first inter insulating film 118 and a second inter insulating 124 [0053] formed on the first insulating film 114 selecting from the group consisting of silicon oxide or silicon nitride [0053].

But Kim does not disclose the light emitting apparatus wherein the film 136 containing fluoroplastics and wherein the first insulating film 118 comprises a material selected from the group consisting of acrylic, polyamide, and polyimide; and the second insulating film 124 containing fluoroplastics.

However, Song discloses the light emitting apparatus wherein the film containing fluoroplastics is one type of polymer selected from polychlorotrifluoroethylene, col. 3 lines 50-55. At the time the invention was made; it would have been obvious to one of ordinary skill in the art to use the inorganic film over the fluoroplastics teaching of Song to replace the film 136 in

Kim's device, because it would have protected the device from degradation caused by an external factor such as oxygen or moisture as taught by Song, see abstract.

With respect to wherein the first insulating film comprises a material selected from the group consisting of acrylic, polyamide, and polyimide, and the second insulating film containing fluoroplastics, Seo discloses the interlayer dielectric layer 60 consisting of silicon oxide, polyimide, or Teflon (fluoroplastics), column 3 lines 42-50. At the time of the invention was made; it would have been obvious to one of ordinary skill in the art to use interlayer dielectric teaching of Seo to replace the interlayer insulating film of Kim as claimed, because such material replacement would have been considered a mere substitution of art-recognized equivalent values, MPEP 2144.06.

Regarding claims 6, 15, and 21-22 Kim does not disclose the light emitting apparatus wherein the second insulating film is a mixed film comprising fluoroplastics and metallic oxides, and a ratio of the metallic oxides in the mixed film monotonically increases from a portion of the mixed film distant from the first electrode to a portion of the mixed film close to the first electrode.

However, at the time the invention was made; it would have been obvious to one of ordinary skill in the art to understand the second insulating film 124 is a mixed film comprising polymer plastics and metallic oxides, and a ratio of the metallic oxides in the mixed film monotonically increases from a portion of the mixed film distant from the first electrode to a portion of the mixed film close to

Art Unit: 2814

the first electrode, because the mixture of metallic oxide and interlayer insulating film would have been resulted from the interaction between the electrode and the interlayer insulating film.

Regarding claims 13-14, Kim does not disclose the light emitting apparatus wherein the film containing fluoroplastics is one type of polymer selected from polychlorotrifluoroethylene

However, Song discloses the light emitting apparatus wherein the film containing fluoroplastics is one type of polymer selected from polychlorotrifluoroethylene, col. 3 lines 50-55. At the time the invention was made; it would have been obvious to one of ordinary skill in the art to use the inorganic film over the fluoroplastics teaching of Song to replace the film 136 in Kim's device, because it would have protected the device from degradation caused by an external factor such as oxygen or moisture as taught by Song, see abstract.

Regarding claims 25-28, Kim discloses the light emitting apparatus is selected from the group consisting of digital camera, laptop computer, mobile computer, portable image reproducing device, goggle type display, video camera and cellular phone [0006].

Regarding claims 31-32, 34-35, Kim and Song do not disclose a light-emitting apparatus, wherein the film containing fluoroplastics has irregularities.

However, it would have been obvious that the junction of layers 400 and 500 of Song would comprise irregularities because of different materials interface.

12. Claims 23 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pub. 20040187917 to Pichler.

Regarding claim 23, Pichler does not disclose the light emitting apparatus is selected from the group consisting of digital camera, laptop computer, mobile computer, portable image reproducing device, goggle type display, video camera and cellular phone.

But Pichler discloses the light emitting apparatus including LED, laser, solar cell or radiation absorbing devices [0049] and [0050]. At the time the invention was made; it would have been obvious to one of ordinary skill in the art to use the teaching of Pichler as claim for intended used, MPEP 2144.07.

Regarding claim 29, Pichler does not disclose a light-emitting apparatus wherein the film containing fluoroplastics has irregularities. However, it would have been obvious that the junction of layer 510 or 512 with other material would comprise irregularities because of different materials interface.

13. Claims 23 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pub. 2003/0143319 to Park et al.

Regarding claim 23, Park does not disclose the light emitting apparatus is selected from the group consisting of digital camera, laptop computer, mobile computer, portable image reproducing device, goggle type display, video camera and cellular phone.

But Park discloses the light emitting OLED apparatus including LCD, foldable display or portable display devices [0005]. At the time the invention was

made; it would have been obvious to one of ordinary skill in the art to use the teaching of Pichler as claim for intended used, MPEP 2144.07.

Regarding claim 29, Park does not disclose a light-emitting apparatus according to Claim 1, wherein the film containing fluoroplastics has irregularities. However, it would have been obvious that the junction of layer organic and inorganic layers of layer 118 would comprise irregularities because of different materials interface.

Response to Arguments

14. Applicant's arguments filed 27 October 2005 have been considered but are moot in view of the new ground(s) of rejection.

15. Applicant's arguments filed 27 October 2005 have been fully considered but they are not persuasive.

a. With respect to Pichler, the Applicant argues that Pichler does not disclose additional layers on the fluorine resin. This is not persuasive because Pichler discloses layer 510 and 512 comprises fluoroplastics or inorganic as encapsulant that can be a multi-layer stack of organic material with inorganic. Such stack layer would read on the claim limitation.

b. With respect to 'inter-dielectric layer vs. fluoroplastics' of Seo, the Applicant argues that the reference must provide some motivation to do such material substitution. Substitution of equivalents requires no express motivation as long as the prior art recognizes the equivalency. *In re Fount* 213 USPQ 532 (CCPA 1982); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *Graver Tank & Mfg.*

Co. Inc. v. Linde Air Products Co. 85 USPQ 328 (USSC 1950). The Applicant has not provided any convincing argument as such material substitution would result in an inoperable device. Furthermore, the use of inter dielectric layer is not just limited to fill gaps between adjacent gate, but it had been widely used as an isolation layer in an interconnection structure in transistor or capacitor, MPEP 2144.07.

Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao X. Le whose telephone number is (571) 272-1708. The examiner can normally be reached on M-F from 8:00 AM - 4:30 PM.

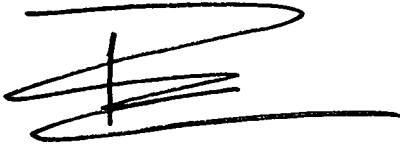
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy can be reached on (571) 272 -1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 10/662,508

Page 15

Art Unit: 2814

A handwritten signature in black ink, consisting of several overlapping horizontal strokes and a vertical line intersecting them.

Thao X. Le
18 November 2005